

CLAIMS

What is claimed is:

1. A sensor capable of detecting of one or more objects, the sensor comprising:
 - one or more light-projecting elements;
 - one or more condenser members; and
 - one or more light-receiving elements;at least one of the light-projecting element or elements irradiating at least a portion of a plurality of protected zones with light by way of at least one of the condenser member or members;
 - light reflected from at least a portion of the protected zones being incident on at least one of the light-receiving element or elements by way of at least one of the condenser member or members;
 - at least a portion of the light-projecting element or elements and at least a portion of the light-receiving element or elements being disposed at one or more focus or foci of at least a portion of the condenser member or members;
 - wherein when at least one of the protected zones which is proximate to at least a portion of the light-projecting element or elements and/or at least a portion of the light-receiving element or elements is taken as reference, at least one edge, on at least one side toward at least a portion of the light-projecting element or elements and/or at least a portion of the light-receiving element or elements, of at least one of the protected zones which is located in at least one direction extending laterally from the at least one reference protected zone is formed so as to be more or less collinear with at least one edge, on at least one side toward at least a portion of the light-projecting element or elements and/or at least a portion of the light-receiving element or elements, of the at least one reference protected zone.
2. A sensor according to claim 1 wherein:
 - at least one of the condenser member or members is formed such that there are a plurality of condenser regions arrayed therein; and
 - at least one of the condenser regions which is designed to irradiate at least a portion of the at least one reference protected zone serves as axis about which at least one of the

condenser regions which is designed to irradiate at least a portion of at least one of the protected zones which is located in at least one direction extending laterally therefrom is disposed in inclined fashion.

3. A sensor according to claim 1 wherein:

at least one of the condenser member or members is formed such that there are a plurality of condenser regions arrayed therein; and

at least a portion of the respective focal lengths from at least one of the light-projecting and/or light-receiving elements to the plurality of condenser regions are set such that at least one focal length therefrom to at least one of the condenser region or regions designed to irradiate at least a portion of the protected zone or zones located in the direction or directions extending laterally is greater than at least one focal length therefrom to at least one of the condenser region or regions designed to irradiate at least a portion of the reference protected zone or zones.

4. A sensor according to claim 2 or 3 wherein:

at least one of the condenser member or members is formed such that there are a plurality of lenses arrayed therein.

5. A sensor according to claim 2 wherein:

at least one of the condenser member or members is at least one prism, at least one lens being disposed at at least one side thereof toward at least one of the light-projecting and/or light-receiving elements.

6. A sensor according to claim 2 or 3 wherein:

at least one of the condenser member or members is formed such that there are a plurality of mirrors arrayed therein.